

2012 Emissions Budget Projection

For

Cherokee County, South Carolina, Maintenance Area

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Amended

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SECTION 1.0 BACKGROUND AND EMISSIONS SUMMARY

1.1 TYPE OF INVENTORY, POLLUTANTS AND SOURCE CATEGORIES

This document presents the updated 2000, 2002 and 2012 emissions budget for the Cherokee County maintenance area. It is a projection based on the 1990 base year emissions inventory previously submitted to the Region 4 Office of United States Environmental Protection Agency in March 1995. The budget addresses volatile organic compounds (VOC), nitrogen oxides (NOx) and carbon monoxide (CO) emissions from stationary point, stationary area, on-road mobile, biogenic, and non-road mobile emission sources. The tons per day VOC emissions from biogenic sources were estimated in the March 1995 submittal and are applicable only to the ozone season. Multiplying the tons per day by the length of the ozone season derived the biogenic tons per year.

The safety margin is made possible by an emissions reduction in the area source category of oxides of nitrogen and volatile organic compounds from residential wood burning. The July 20, 1992 submittal had overestimated emissions from residential wood burning. This safety margin will more fairly allow South Carolina Department of Transportation to demonstrate conformity with the South Carolina Air Quality Implementation Plan.

1.2 GROWTH PROJECTIONS

With the exception of on-road mobile sources and biogenic sources, the emissions budget for each source category was calculated by applying growth factors to base line 1990 emissions. For Area and Non-road Mobile Sources, a growth factor of 10.4% for 2000 and 12.5% were derived from population growth projections from the 1995 South Carolina Statistical Abstracts. A 21.4% growth factor for 2012 was derived from population projections obtained from the 1998 South Carolina Statistical Abstract. For Point Sources, a one percent per year growth factor was used to estimate 2012 emissions based on the economic and industrial growth factors as listed in the 1999 South Carolina Department of Commerce Annual Report. The growth factors were not applied to the biogenic source category based on the assumption that biogenic emissions do not increase as population increases. The on-road mobile source category is addressed in section 2 of this document. The summary of all source categories for 1990, 2000, 2002 and 2012 are listed below in Table 1-1 by pollutant.

TABLE 1-1. EMISSIONS SUMMARY OF DAILY AND ANNUAL PROJECTED FROM 1990 TO 2012

	Tons/Day				Tons/Year			
	1990	2000	2002	2012	1990	2000	2002	2012
VOC	43.47	42.32	42.41	43.28	10,148.40	9,739.86	9,772.63	10,104.83
NOx	9.37	9.23	9.16	8.36	3,439.30	3,388.29	3,357.74	3,068.34
CO	74.22	46.67	44.23	40.04	30,096.10	20,338.54	19,527.32	18,299.39

TABLE 1-2. VOC EMISSIONS, DAILY AND ANNUAL, PROJECTED FROM 1990 TO 2012

VOC Emissions	Tons/Day				Tons/Year			
	1990	2000	2002	2012	1990	2000	2002	2012
Point Sources	2.02	2.23	2.27	2.51	614.10	677.97	690.86	763.14
Area Sources	3.79	4.19	4.27	4.61	1,596.40	1,762.43	1,795.95	1,938.03
On-road Mobile Sources	6.11	4.32	4.28	4.59	2,229.20	1,578.37	1,563.23	1,674.74
Non-road Mobile Sources	0.23	0.25	0.26	0.24	71.10	78.49	79.99	86.32
Biogenic Sources	31.32	31.32	31.32	31.32	5,637.60	5,637.60	5,637.60	5,637.60
Safety Margin	NA	0.01	0.01	.01	NA	5.00	5.00	5.00
Total	43.47	42.32	42.41	43.28	10,148.4	9,739.86	9,772.63	10104.83

TABLE 1-3. NOX EMISSIONS, DAILY AND ANNUAL, PROJECTED FROM 1990 TO 2012

NOx Emissions	Tons/Day				Tons/Year			
	1990	2000	2002	2012	1990	2000	2002	2012
Point Sources	0.82	0.91	0.93	1.02	270.20	298.30	303.98	335.78
Area Sources	0.21	0.23	0.24	0.26	147.10	162.40	165.49	178.58
On-road Mobile Sources	7.79	7.45	7.34	6.38	2,843.90	2,720.97	2,677.91	2,327.77
Non-road Mobile Sources	0.55	0.61	0.62	0.67	178.10	196.62	200.36	216.21
Biogenic Sources	NA	NA	NA	NA	NA	NA	NA	NA
Safety Margin	NA	0.03	0.03	0.03	NA	10.00	10.00	10.00
Total	9.37	9.23	9.16	8.36	3,439.30	3,388.29	3,357.74	3,068.34

TABLE 1-4. CO EMISSIONS, DAILY AND ANNUAL, PROJECTED FROM 1990 TO 2012

CO Emissions	Tons/Day				Tons/Year			
	1990	2000	2002	2012	1990	2000	2002	2012
Point Sources	0.26	0.29	0.29	0.32	83.20	91.85	93.60	104.43
Area Sources	5.84	6.45	6.57	7.0	5,319.70	5,872.95	5,984.66	6,458.12
On-road Mobile Sources	64.92	36.40	33.77	28.84	23,695.80	13,272.61	12,326.98	10,526.00
Non-road Mobile Sources	3.20	3.53	3.60	3.88	997.40	1,101.13	1,122.08	1,210.84
Biogenic Sources	NA	NA	NA	NA	NA	NA	NA	NA
Total	74.22	46.67	44.23	40.04	30,096.10	20,338.54	19,527.32	18,299.39

SECTION 2.0 ON-ROAD MOBILE SOURCES

2.1 INTRODUCTION

A special run of MOBILE5a was performed to estimate emission factors for the 2000, 2002 and 2012 motor vehicle fleets in Cherokee County. The model was performed to determine emission factors for VOC, NOx, and CO. VOC emission estimates include vehicle-refueling emissions which range from about 8 - 15% of the total. The main references for preparing the highway vehicle portion of the inventory were the "Procedures Document" and Users Guide to MOBILE5a (March, 1993). The model inputs and outputs are listed in appendices A and B respectively. Total Cherokee County on-road mobile source emissions projected for 2000, 2002 and 2012 are summarized in Table 2-1.

TABLE 2-1. TOTAL ON-ROAD MOBILE SOURCE EMISSIONS FOR CHEROKEE COUNTY

	Tons/Day			Tons/Year		
	2000	2002	2012	2000	2002	2012
VOC	4.32	4.28	4.59	1,578.37	1,563.23	1,674.74
NOx	7.45	7.34	6.38	2,720.97	2,677.91	2,327.77
CO	36.40	33.77	28.84	13,272.61	12,326.98	10,526.00

2.2 VMT ESTIMATES

Vehicle miles that will be traveled in Cherokee County in 2000 are an estimated 753,765,471 miles, 799,669,788 miles in 2002 and 1,003,561,660 miles in 2012. Those projections were derived by taking the 1990 Cherokee vehicle miles traveled (VMT) from the Highway Performance Monitoring System (HPMS) and applying a South Carolina Department of Transportation (SCDOT) recommended 3% growth factor each year. The percentages of VMT by vehicle types are the same as the estimates used in the 1990 base year inventories. These types are: light duty gas vehicle (LDGV), light duty gas truck1 (LDGT1), light duty gas truck2 (LDGT2), heavy duty gas vehicle (HDGV), light duty diesel vehicle (LDDV), light duty diesel trucks 1 and 2 (LDDT), heavy duty diesel vehicle (HDDV), and motorcycle (MC). The percentage distribution of VMT for the eight vehicle types is shown in Table 2-2.

TABLE 2-2. PERCENTAGE DISTRIBUTION OF VMT BY VEHICLE TYPE IN CHEROKEE COUNTY

Vehicle Type	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	Total
VMT Ratio	0.630	0.212	0.101	0.010	0.008	0.002	0.033	0.004	1.000

VMT estimates for each roadway class were obtained from the SCDOT. VMT estimates were developed for each vehicle type and roadway class based on the assumption that the distribution of vehicles will be the same as above in Table 2-2 for all of the roadway classes. Total annual VMT for each road type are shown in Tables 2-3, 2-4 and 2-5. The National Highway Functional Classification System was revised in 1993 following the 1990 census. As a result, functional classifications for roadways in Cherokee county were changed and the Principle Arterial: Urban class was eliminated. An approximate 23-mile section of Interstate 85 is located within Cherokee County. The Interstate only traverses the rural portions of the county; therefore, no VMT is attributed to the Interstate Urban functional classification as none of Interstate 85 is located within the urbanized area of the county.

TABLE 2-3. 2000 VMT BY ROAD CLASS ALL VEHICLE TYPES FOR CHEROKEE COUNTY

Road Class		Daily VMT (million miles)	Annual VMT (million miles)
Interstate	rural	1.525137	556.675005
	urban	0.0000	0.0000
Principal arterial	rural	0.0396	14.4601
	urban	0.0821	29.9586
Minor arterial	rural	0.2650	96.7338
	urban	0.1214	44.3134
Major collector	rural	0.3533	128.9568
	urban	0.0299	10.9260
Minor collector	rural	0.0305	11.1424
	urban	combined with major collector	
Local	rural	0.1563	57.0479
	urban	0.0452	16.5127
Total		2.712808	1003.56166

TABLE 2-4. 2002 VMT BY ROAD CLASS ALL VEHICLE TYPES FOR CHEROKEE COUNTY

Road Class	Daily VMT (million miles)	Annual VMT (million miles)
Interstate	rural	0.9990
	urban	0.0000
Principal arterial	rural	0.0420
	urban	0.0871
Minor arterial	rural	0.2812
	urban	0.1288
Major collector	rural	0.3748
	urban	0.0318
Minor collector	rural	0.0324
	urban	combined with major collector
Local	rural	0.1658
	urban	0.0480
Total	2.1909	799.6697

TABLE 2-5. 2012 VMT BY ROAD CLASS ALL VEHICLE TYPES FOR CHEROKEE COUNTY

Road Class	Daily VMT (million miles)	Annual VMT (million miles)
Interstate	rural	1.525137
	urban	-
Principal arterial	rural	.051599
	urban	-
Minor arterial	rural	.283572
	urban	.116339
Major collector	rural	.356814
	urban	.082400
Minor collector	rural	.036676
	urban	combined with major collector
Local	rural	.224375
	urban	.072572
Total	2.749484	1003.5617

2.3 EMISSION FACTOR ESTIMATION PROCEDURE

MOBILE5a was used to develop emission factors for 2000, 2002 and 2012 on-road mobile sources. The input parameters below were used:

1. Tampering rates: Default values in the model reflect national rates and were accepted without modification.
2. Vehicle speed: Default values were used for road classes D and F. Speeds provided by the SCDDOT were used for the other road classes. Interstate 85 in Cherokee County is located in a rural sector of the county; therefore, there no speeds are modeled for the Interstate Urban classification. Although average speeds above 65 mph are listed for the Interstate routes, MOBILE5a will default to a maximum of 65 mph speed for any calculation that uses a higher speed. Therefore, the emission factors used for the Interstate Rural road classification is for the 65 mph speed.

Road Class	2000 and 2002	2012
Interstate Rural	66.8 mph	72.0 mph
Interstate Urban	66.8 mph	-
Principal Arterial: Rural	59.1 mph	53.0 mph
Principal Arterial: Urban	49.1 mph	49.1 mph
Minor Arterial: Rural	59.1 mph	54.2 mph
Minor Arterial: Urban	49.1 mph	26.3 mph
Major Collector: Rural	53.9 mph	52.4 mph
Major/Minor Collector: Urban	19.6 mph	24.9 mph
Minor Collector: Rural	53.9 mph	50.0 mph
Local: Rural	30.5 mph	30.0 mph
Local: Urban	19.6 mph	15.0 mph

3. VMT mix: The values estimated in Table 1.2 were used.
4. Annual mileage accumulation rates: Model defaults were used.
5. Basic exhaust emission rates: New basic emission rates for HDDVs were substituted for 2004 and later model years to adjust projections that will be required by the new combined emission standard for NOx and NMHC. The substitutions were made in accordance with the MOBILE5 Information Sheet #5, "Inclusion of New 2004 NOx Standard for Heavy-Duty Diesel Engines in MOBILE5a and MOBILE5b Modeling". The methodology used to make the substitution for this model year and later for this vehicle class occurs within the model input parameters. The resultant output emission factors are used without any additional corrections or post processing.

The effect of the New National Standard for Light-Duty Gasoline Fueled Vehicles (NLEV) was also modeled by inclusion of the procedures contained in MOBILE5 Information Sheet #6, "Effect of New National Low Emission Vehicle Standard for Light-Duty Gasoline Vehicles". To model the effects of the more stringent NLEV tailpipe standard, the basic emission rates contained in the model were altered to simulate the California LEV program. This was accomplished by inserting a LEV Phase-In Data file which "turns-on" the California standard for each of the light-duty gasoline vehicle classes beginning in 2001. The basic emission rate reductions are accomplished within the model and no additional substitutions, subtraction or post processing is needed. The LEV Phase-In data file used is included in Appendix A.

6. Inspection & maintenance program: No I & M program was in effect in South Carolina during 1990.
7. Correction for exhaust emission factors: Model defaults were used.
8. Anti-tampering program: No program was in effect during 1990 in South Carolina.
9. Vehicle refueling emission controls: no controls were in effect during 1990 and no future controls are projected.
10. HC emission factors: VOC emission factors were selected.
11. Fuel volatility class: In all cases, ASTM class was left blank since the effect of reformulated gasoline on emissions was not modeled.
12. Fuel volatility: The requirements of fuel volatility during 1997, as indicated in ASTM Designation: D 4814, was 9.0 psi. Since this is the most recent standard for fuel volatility for South Carolina, and no future restrictions are planned at this time, this volatility was used for projections to 2000, 2002 and 2012.
13. Altitude: Low altitude (< 4000 feet) applies to Cherokee County.
14. Calendar years: 2000, 2002 and 2012
15. Operating mode fractions: values specified in MOBILE 5a were used.

In addition to the parameters above, the minimum and maximum temperatures that were used in the 1990 inventory were used for the projections. Those temperatures were derived by averaging the minimum and maximum temperatures during the four days when ambient ozone levels exceeded the NAAQS. The average high was 94.2° F and the average low was 64.2° F.

2.4 ON-ROAD MOBILE SOURCE EMISSIONS

MOBILE5a was used to estimate emission factors for each roadway class. The vehicle class distribution values in Table 2-2 were multiplied by the VMT traveled in each road class shown in Tables 2-3 and 2-4 resulting in daily and annual VMT for each vehicle class traveled on each road class for each year. Activity levels for each vehicle class were multiplied by the emission factor for each pollutant. Emissions were then converted from grams per year to tons per year. Tables 2-5 through 2-14 include emissions data for each vehicle type for 2000, 2002 and 2012.

TABLE 2-6. 2000 VOC EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	1.67	208,977,706.83	384.76	1.05E+00
	LDGT1	2.16	66,680,386.72	158.79	4.35E-01
	LDGT2	2.84	29,559,346.69	92.55	2.54E-01
	HDGV	4.36	10,655,113.34	51.22	1.40E-01
	LDDV	0.28	343,713.33	0.11	2.91E-04
	LDDT	0.37	687,426.67	0.28	7.68E-04
	HDDV	0.99	24,747,360.02	27.01	7.40E-02
	MC	6.05	2,062,280.00	13.76	3.77E-02
Interstate: Urban (66.8 mph)	LDGV	1.67	0.00	0.00	0.00E+00
	LDGT1	2.16	0.00	0.00	0.00E+00
	LDGT2	2.84	0.00	0.00	0.00E+00
	HDGV	4.36	0.00	0.00	0.00E+00
	LDDV	0.28	0.00	0.00	0.00E+00
	LDDT	0.37	0.00	0.00	0.00E+00
	HDDV	0.99	0.00	0.00	0.00E+00
	MC	6.05	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	1.53	8,792,008.47	14.83	4.06E-02
	LDGT1	1.95	2,805,344.81	6.03	1.65E-02
	LDGT2	2.53	1,243,606.46	3.47	9.50E-03
	HDGV	4.38	448,276.75	2.16	5.93E-03
	LDDV	0.28	14,460.54	0.00	1.22E-05
	LDDT	0.37	28,921.08	0.01	3.23E-05
	HDDV	0.99	1,041,158.90	1.14	3.11E-03
	MC	5.60	86,763.24	0.54	1.47E-03
Principal Arterial: Urban (49.1 mph)	LDGV	1.47	18,214,819.03	29.52	8.09E-02
	LDGT1	1.85	5,811,965.28	11.85	3.25E-02
	LDGT2	2.38	2,576,438.22	6.76	1.85E-02
	HDGV	4.58	928,716.10	4.69	1.28E-02
	LDDV	0.30	29,958.58	0.01	2.71E-05
	LDDT	0.40	59,917.17	0.03	7.24E-05
	HDDV	1.07	2,157,018.04	2.54	6.97E-03
	MC	5.30	179,751.50	1.05	2.88E-03
Minor Arterial: Rural (59.1 mph)	LDGV	1.53	58,814,124.30	99.21	2.72E-01
	LDGT1	1.95	18,766,348.87	40.35	1.11E-01
	LDGT2	2.53	8,319,103.11	23.20	6.36E-02
	HDGV	4.38	2,998,746.47	14.48	3.97E-02
	LDDV	0.28	96,733.76	0.03	8.18E-05
	LDDT	0.37	193,467.51	0.08	2.16E-04
	HDDV	0.99	6,964,830.51	7.60	2.08E-02
	MC	5.60	580,402.54	3.58	9.82E-03
Minor Arterial: Urban (49.1 mph)	LDGV	1.47	26,942,521.63	43.67	1.20E-01
	LDGT1	1.85	8,596,791.44	17.53	4.80E-02
	LDGT2	2.38	3,810,948.78	10.00	2.74E-02
	HDGV	4.58	1,373,714.10	6.94	1.90E-02
	LDDV	0.30	44,313.36	0.01	4.02E-05
	LDDT	0.40	88,626.72	0.04	1.07E-04
	HDDV	1.07	3,190,561.77	3.76	1.03E-02

(10)

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	MC	5.30	265,880.15	1.55	4.26E-03
Major Collector: Rural (53.9 mph)	LDGV	1.44	78,405,758.78	124.48	3.41E-01
	LDGT1	1.82	25,017,626.98	50.20	1.38E-01
	LDGT2	2.33	11,090,288.25	28.49	7.81E-02
	HDGV	4.46	3,997,662.04	19.66	5.39E-02
	LDDV	0.29	128,956.84	0.04	1.13E-04
	LDDT	0.38	257,913.68	0.11	2.96E-04
	HDDV	1.02	9,284,892.49	10.44	2.86E-02
	MC	5.30	773,741.04	4.52	1.24E-02
Major/Minor Collector: Urban (19.6 mph)	LDGV	2.73	6,643,032.42	19.99	5.48E-02
	LDGT1	3.09	2,119,651.79	7.22	1.98E-02
	LDGT2	4.11	939,639.45	4.26	1.17E-02
	HDGV	7.51	338,707.25	2.80	7.68E-03
	LDDV	0.63	10,926.04	0.01	2.08E-05
	LDDT	0.84	21,852.08	0.02	5.54E-05
	HDDV	2.22	786,674.89	1.93	5.28E-03
	MC	6.14	65,556.24	0.44	1.22E-03
Minor Collector: Rural (53.9 mph)	LDGV	1.44	6,774,585.71	10.76	2.95E-02
	LDGT1	1.82	2,161,627.68	4.34	1.19E-02
	LDGT2	2.33	958,247.32	2.46	6.74E-03
	HDGV	4.46	345,414.73	1.70	4.65E-03
	LDDV	0.29	11,142.41	0.00	9.76E-06
	LDDT	0.38	22,284.82	0.01	2.56E-05
	HDDV	1.02	802,253.57	0.90	2.47E-03
	MC	5.30	66,854.46	0.39	1.07E-03
Local: Rural (30.5 mph)	LDGV	2.01	34,685,127.08	76.86	2.11E-01
	LDGT1	2.36	11,067,293.84	28.80	7.89E-02
	LDGT2	3.08	4,906,119.95	16.66	4.56E-02
	HDGV	5.67	1,768,485.10	11.06	3.03E-02
	LDDV	0.44	57,047.91	0.03	7.58E-05
	LDDT	0.58	114,095.81	0.07	2.00E-04
	HDDV	1.55	4,107,449.26	7.02	1.92E-02
	MC	5.63	342,287.44	2.12	5.82E-03
Local: Urban (19.6 mph)	LDGV	2.73	10,039,721.94	30.22	8.28E-02
	LDGT1	3.09	3,203,463.91	10.91	2.99E-02
	LDGT2	4.11	1,420,092.25	6.43	1.76E-02
	HDGV	7.51	511,893.72	4.24	1.16E-02
	LDDV	0.63	16,512.70	0.01	3.14E-05
	LDDT	0.84	33,025.40	0.03	8.38E-05
	HDDV	2.22	1,188,914.44	2.91	7.97E-03
	MC	6.14	99,076.20	0.67	1.84E-03
Total 2000 VOC:				1,578.37	4.32

TABLE 2-7. 2002 VOC EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	1.56	221,704,449.17	381.31	1.07E+00
	LDGT1	1.98	70,741,222.27	154.42	4.34E-01
	LDGT2	2.62	31,359,510.90	90.58	2.54E-01
	HDGV	3.83	11,304,009.74	47.73	1.34E-01
	LDDV	0.25	364,645.48	0.10	2.82E-04
	LDDT	0.34	729,290.95	0.27	7.68E-04
	HDDV	0.96	26,254,474.24	27.90	7.84E-02
	MC	6.05	2,187,872.85	14.59	4.10E-02
Interstate: Urban (66.8 mph)	LDGV	1.56	0.00	0.00	0.00E+00
	LDGT1	1.98	0.00	0.00	0.00E+00
	LDGT2	2.62	0.00	0.00	0.00E+00
	HDGV	3.83	0.00	0.00	0.00E+00
	LDDV	0.25	0.00	0.00	0.00E+00
	LDDT	0.34	0.00	0.00	0.00E+00
	HDDV	0.96	0.00	0.00	0.00E+00
	MC	6.05	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	1.43	9,327,441.78	14.71	4.13E-02
	LDGT1	1.81	2,976,190.31	5.94	1.67E-02
	LDGT2	2.36	1,319,342.09	3.43	9.64E-03
	HDGV	3.85	475,576.80	2.02	5.67E-03
	LDDV	0.25	15,341.19	0.00	1.19E-05
	LDDT	0.34	30,682.37	0.01	3.23E-05
	HDDV	0.97	1,104,565.47	1.18	3.32E-03
	MC	5.60	92,047.12	0.57	1.60E-03
Principal Arterial: Urban (49.1 mph)	LDGV	1.39	19,324,101.51	29.61	8.32E-02
	LDGT1	1.74	6,165,913.97	11.83	3.32E-02
	LDGT2	2.24	2,733,343.31	6.75	1.90E-02
	HDGV	4.02	985,274.91	4.37	1.23E-02
	LDDV	0.27	31,783.06	0.01	2.66E-05
	LDDT	0.36	63,566.12	0.03	7.09E-05
	HDDV	1.04	2,288,380.44	2.62	7.37E-03
	MC	5.30	190,698.37	1.11	3.13E-03
Minor Arterial: Rural (59.1 mph)	LDGV	1.43	62,395,904.47	98.37	2.76E-01
	LDGT1	1.81	19,909,219.52	39.73	1.12E-01
	LDGT2	2.36	8,825,736.49	22.96	6.45E-02
	HDGV	3.85	3,181,370.13	13.50	3.79E-02
	LDDV	0.25	102,624.84	0.03	7.95E-05
	LDDT	0.34	205,249.69	0.08	2.16E-04
	HDDV	0.97	7,388,988.69	7.90	2.22E-02
	MC	5.60	615,749.06	3.80	1.04E-02
Minor Arterial: Urban (49.1 mph)	LDGV	1.39	28,583,321.20	43.80	1.20E-01
	LDGT1	1.74	9,120,336.04	17.50	4.79E-02
	LDGT2	2.24	4,043,035.56	9.98	2.74E-02
	HDGV	4.02	1,457,373.28	6.46	1.77E-02
	LDDV	0.27	47,012.04	0.01	3.83E-05
	LDDT	0.36	94,024.08	0.04	1.02E-04
	HDDV	1.04	3,384,866.98	3.88	1.06E-02

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)			
				MC	LDGV	LDGT1	LDGT2	HDGV
Major Collector: Rural (53.9 mph)	LDGV	1.36	83,180,669.49	124.72	3.42E-01			
	LDGT1	1.70	26,541,200.46	49.74	1.36E-01			
	LDGT2	2.20	11,765,686.80	28.54	7.82E-02			
	HDGV	3.92	4,241,119.66	18.33	5.02E-02			
	LDDV	0.26	136,810.31	0.04	1.07E-04			
	LDDT	0.35	273,620.62	0.11	2.89E-04			
	HDDV	0.99	9,850,342.44	10.75	2.95E-02			
	MC	5.30	820,861.87	4.80	1.31E-02			
	LDGV	2.59	7,047,593.09	20.12	5.51E-02			
Major/Minor Collector: Urban (19.6 mph)	LDGT1	2.93	2,248,738.59	7.26	1.99E-02			
	LDGT2	3.94	996,863.50	4.33	1.19E-02			
	HDGV	6.57	359,334.52	2.60	7.13E-03			
	LDDV	0.57	11,591.44	0.01	2.00E-05			
	LDDT	0.75	23,182.87	0.02	5.25E-05			
	HDDV	2.16	834,583.39	1.99	5.45E-03			
	MC	6.14	69,548.62	0.47	1.29E-03			
	LDGV	1.36	7,187,157.98	10.78	2.95E-02			
	LDGT1	1.70	2,293,270.80	4.30	1.18E-02			
Minor Collector: Rural (53.9 mph)	LDGT2	2.20	1,016,604.58	2.47	6.76E-03			
	HDGV	3.92	366,450.49	1.58	4.34E-03			
	LDDV	0.26	11,820.98	0.00	9.28E-06			
	LDDT	0.35	23,641.97	0.01	2.50E-05			
	HDDV	0.99	851,110.81	0.93	2.55E-03			
	MC	5.30	70,925.90	0.41	1.14E-03			
	LDGV	1.90	36,797,451.32	77.08	2.11E-01			
	LDGT1	2.22	11,741,292.03	28.74	7.87E-02			
	LDGT2	2.93	5,204,902.65	16.81	4.61E-02			
Local: Rural (30.5 mph)	HDGV	4.98	1,876,185.84	10.30	2.82E-02			
	LDDV	0.40	60,522.12	0.03	7.31E-05			
	LDDT	0.53	121,044.25	0.07	1.94E-04			
	HDDV	1.51	4,357,592.92	7.25	1.99E-02			
	MC	5.63	363,132.74	2.25	6.18E-03			
	LDGV	2.59	10,651,141.00	30.41	8.33E-02			
	LDGT1	2.93	3,398,554.86	10.98	3.01E-02			
	LDGT2	3.94	1,506,575.87	6.54	1.79E-02			
	HDGV	6.57	543,068.04	3.93	1.08E-02			
Local: Urban (19.6 mph)	LDDV	0.57	17,518.32	0.01	3.02E-05			
	LDDT	0.75	35,036.65	0.03	7.94E-05			
	HDDV	2.16	1,261,319.33	3.00	8.23E-03			
	MC	6.14	105,109.94	0.71	1.95E-03			
Total 2002 VOC:				1563.23	4.28			

TABLE 2-8. 2012 VOC EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (72 mph)	LDGV	1.29	350,705,253	498.56	1.37E+00
	LDGT1	1.61	118,015,101	209.38	5.74E-01
	LDGT2	2.16	56,224,176	133.83	3.67E-01
	HDGV	2.63	5,566,750	16.13	4.42E-02
	LDDV	0.23	4,453,400	1.13	3.09E-03
	LDDT	0.31	1,113,350	0.38	1.04E-03
	HDDV	0.94	18,370,275	19.03	5.21E-02
	MC	6.05	2,226,700	14.85	4.07E-02
Interstate: Urban (- mph)	LDGV				
	LDGT1				
	LDGT2				
	HDGV				
	LDDV				
	LDDT				
	HDDV				
	MC				
Principal Arterial: Rural (53.0 mph)	LDGV	1.14	11,865,190	14.91	4.08E-02
	LDGT1	1.45	3,992,731	6.38	1.75E-02
	LDGT2	1.91	1,902,197	4.00	1.10E-03
	HDGV	2.70	188,336	0.56	1.54E-03
	LDDV	0.24	150,669	0.04	1.09E-04
	LDDT	0.32	37,667	0.01	3.64E-05
	HDDV	0.97	621,510	0.66	1.82E-03
	MC	5.30	75,335	0.44	1.21E-03
Principal Arterial: Urban (49.1 mph)	LDGV				
	LDGT1				
	LDGT2				
	HDGV				
	LDDV				
	LDDT				
	HDDV				
	MC				
Minor Arterial: Rural (54.2 mph)	LDGV	1.13	65,207,381	81.20	2.22E-01
	LDGT1	1.44	21,942,801	34.82	9.54E-02
	LDGT2	1.90	10,453,882	21.89	6.00E-02
	HDGV	2.69	1,035038	3.07	8.41E-03
	LDDV	0.23	828,030	0.21	5.75E-04
	LDDT	0.32	207,008	0.07	2.00E-04
	HDDV	0.96	3,415,625	3.61	9.90E-03
	MC	5.30	414,015	2.42	6.62E-03
Minor Arterial: Urban (26.3 mph)	LDGV	1.74	26,752,153	51.30	1.41E-01
	LDGT1	2.07	9,002,312	20.54	5.63E-02
	LDGT2	2.84	4,288,837	13.42	3.68E-02
	HDGV	3.78	424,637	1.77	4.85E-03
	LDDV	0.41	339,710	0.15	4.21E-05
	LDDT	0.55	84,927	0.05	1.41E-04

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Major Collector: Rural (52.4 mph)	HDDV	1.66	1,401,303	2.56	7.02E-03
	MC	5.79	169,855	1.08	2.97E-03
Major Collector: Rural (52.4 mph)	LDGV	1.14	82,049,379	103.08	2.82E-01
	LDGT1	1.45	27,610,267	44.12	1.21E-01
	LDGT2	1.92	13,153,948	27.83	7.63E-02
	HDGV	2.71	1,302,371	3.89	1.07E-02
	LDDV	0.24	1,041,897	0.28	7.55E-04
	LDDT	0.33	260,474	0.09	2.60E-04
	HDDV	0.98	4,297,825	4.64	1.27E-02
	MC	5.30	520,948	3.04	8.34E-03
	LDGV	1.81	18,947,880	37.79	1.04E-01
Major/Minor Collector: Urban (24.9 mph)	LDGT1	2.15	6,376,112	15.11	4.14E-02
	LDGT2	2.94	3,037,676	9.84	2.70E-02
	HDGV	3.92	300,760	1.30	3.56E-03
	LDDV	0.42	240,608	0.11	3.05E-04
	LDDT	0.58	60,152	0.04	1.05E-05
	HDDV	1.74	992,508	1.90	5.21E-03
	MC	5.85	120,304	0.78	2.12E-03
	LDGV	1.15	8,433,646	10.69	2.93E-02
Minor Collector: Rural (50 mph)	LDGT1	1.47	2,837,989	4.60	1.26E-02
	LDGT2	1.93	1,352,061	2.88	7.88E-03
	HDGV	2.75	133,867	0.41	1.11E-03
	LDDV	0.24	107,094	0.03	7.76E-05
	LDDT	0.33	26,773	0.01	2.67E-05
	HDDV	1.00	441,762	0.49	1.33E-03
	MC	5.30	53,547	0.31	8.57E-04
	LDGV	1.59	51,595,031	90.40	2.48E-01
Local: Rural (30.0 mph)	LDGT1	1.91	17,362,138	36.54	1.00E-02
	LDGT2	2.60	8,271,584	23.70	6.49E-02
	HDGV	3.49	818,969	3.15	8.63E-03
	LDDV	0.36	655,175	0.26	7.12E-04
	LDDT	0.50	163,794	0.09	2.47E-05
	HDDV	1.49	2,702,597	4.44	1.22E-02
	MC	5.64	327,588	2.04	5.58E-03
	LDGV	2.56	16,687,931	47.08	1.29E-01
Local: Urban (15.0 mph)	LDGT1	2.94	5,615,621	18.19	4.98E-02
	LDGT2	4.11	2,675,367	12.12	3.32E-02
	HDGV	5.62	264,888	1.64	4.49E-03
	LDDV	0.61	211,910	0.14	3.90E-04
	LDDT	0.84	52,978	0.05	1.34E-05
	HDDV	2.52	874,130	2.43	6.65E-03
	MC	6.54	105,955	0.76	2.09E-03
Total 2012 VOC:				1,674.74	4.59

TABLE 2-9. 2000 NOX EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	2.39	208,977,706.83	550.65	1.51E+00
	LDGT1	2.90	66,680,386.72	213.19	5.84E-01
	LDGT2	4.00	29,559,346.69	130.36	3.57E-01
	HDGV	6.61	10,655,113.34	77.65	2.13E-01
	LDDV	2.30	343,713.33	0.87	2.39E-03
	LDDT	2.52	687,426.67	1.91	5.23E-03
	HDDV	17.84	24,747,360.02	486.75	1.33E+00
	MC	1.69	2,062,280.00	3.84	1.05E-02
Interstate: Urban (66.8 mph)	LDGV	2.39	0.00	0.00	0.00E+00
	LDGT1	2.90	0.00	0.00	0.00E+00
	LDGT2	4.00	0.00	0.00	0.00E+00
	HDGV	6.61	0.00	0.00	0.00E+00
	LDDV	2.30	0.00	0.00	0.00E+00
	LDDT	2.52	0.00	0.00	0.00E+00
	HDDV	17.84	0.00	0.00	0.00E+00
	MC	1.69	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	2.09	8,792,008.47	20.26	5.55E-02
	LDGT1	2.50	2,805,344.81	7.73	2.12E-02
	LDGT2	3.44	1,243,606.46	4.72	1.29E-02
	HDGV	6.37	448,276.75	3.15	8.63E-03
	LDDV	1.82	14,460.54	0.03	7.95E-05
	LDDT	1.99	28,921.08	0.06	1.74E-04
	HDDV	14.08	1,041,158.90	16.16	4.43E-02
	MC	1.48	86,763.24	0.14	3.88E-04
Principal Arterial: Urban (49.1 mph)	LDGV	1.59	18,214,819.03	31.93	8.75E-02
	LDGT1	1.82	5,811,965.28	11.66	3.20E-02
	LDGT2	2.49	2,576,438.22	7.07	1.94E-02
	HDGV	5.95	928,716.10	6.09	1.67E-02
	LDDV	1.36	29,958.58	0.04	1.23E-04
	LDDT	1.49	59,917.17	0.10	2.70E-04
	HDDV	10.55	2,157,018.04	25.09	6.87E-02
	MC	1.13	179,751.50	0.22	6.14E-04
Minor Arterial: Rural (59.1 mph)	LDGV	2.09	58,814,124.30	135.52	3.71E-01
	LDGT1	2.50	18,766,348.87	51.72	1.42E-01
	LDGT2	3.44	8,319,103.11	31.55	8.64E-02
	HDGV	6.37	2,998,746.47	21.06	5.77E-02
	LDDV	1.82	96,733.76	0.19	5.32E-04
	LDDT	1.99	193,467.51	0.42	1.16E-03
	HDDV	14.08	6,964,830.51	108.12	2.96E-01
	MC	1.48	580,402.54	0.95	2.59E-03
Minor Arterial: Urban (49.1 mph)	LDGV	1.59	26,942,521.63	47.23	1.29E-01
	LDGT1	1.82	8,596,791.44	17.25	4.73E-02
	LDGT2	2.49	3,810,948.78	10.46	2.87E-02
	HDGV	5.95	1,373,714.10	9.01	2.47E-02
	LDDV	1.36	44,313.36	0.07	1.82E-04
	LDDT	1.49	88,626.72	0.15	3.99E-04

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	HDDV	10.55	3,190,561.77	37.11	1.02E-01
	MC	1.13	265,880.15	0.33	9.08E-04
Major Collector: Rural (53.9 mph)	LDGV	1.83	78,405,758.78	158.19	4.33E-01
	LDGT1	2.15	25,017,626.98	59.30	1.62E-01
	LDGT2	2.95	11,090,288.25	36.07	9.88E-02
	HDGV	6.15	3,997,662.04	27.11	7.43E-02
	LDDV	1.54	128,956.84	0.22	6.00E-04
	LDDT	1.68	257,913.68	0.48	1.31E-03
	HDDV	11.91	9,284,892.49	121.92	3.34E-01
	MC	1.30	773,741.04	1.11	3.04E-03
	LDGV	1.42	6,643,032.42	10.40	2.85E-02
Major/Minor Collector: Urban (19.6 mph)	LDGT1	1.66	2,119,651.79	3.88	1.06E-02
	LDGT2	2.26	939,639.45	2.34	6.41E-03
	HDGV	4.72	338,707.25	1.76	4.83E-03
	LDDV	1.33	10,926.04	0.02	4.39E-05
	LDDT	1.46	21,852.08	0.04	9.64E-05
	HDDV	10.31	786,674.89	8.94	2.45E-02
	MC	0.78	65,556.24	0.06	1.54E-04
	LDGV	1.83	6,774,585.71	13.67	3.74E-02
Minor Collector: Rural (53.9 mph)	LDGT1	2.15	2,161,627.68	5.12	1.40E-02
	LDGT2	2.95	958,247.32	3.12	8.54E-03
	HDGV	6.15	345,414.73	2.34	6.42E-03
	LDDV	1.54	11,142.41	0.02	5.18E-05
	LDDT	1.68	22,284.82	0.04	1.13E-04
	HDDV	11.91	802,253.57	10.53	2.89E-02
	MC	1.30	66,854.46	0.10	2.63E-04
	LDGV	1.49	34,685,127.08	56.98	1.56E-01
Local: Rural (30.5 mph)	LDGT1	1.71	11,067,293.84	20.86	5.72E-02
	LDGT2	2.33	4,906,119.95	12.60	3.45E-02
	HDGV	5.17	1,768,485.10	10.08	2.76E-02
	LDDV	1.16	57,047.91	0.07	2.00E-04
	LDDT	1.27	114,095.81	0.16	4.38E-04
	HDDV	9.01	4,107,449.26	40.80	1.12E-01
	MC	0.95	342,287.44	0.36	9.82E-04
	LDGV	1.42	10,039,721.94	15.72	4.31E-02
Local: Urban (19.6 mph)	LDGT1	1.66	3,203,463.91	5.86	1.61E-02
	LDGT2	2.26	1,420,092.25	3.54	9.69E-03
	HDGV	4.72	511,893.72	2.66	7.30E-03
	LDDV	1.33	16,512.70	0.02	6.63E-05
	LDDT	1.46	33,025.40	0.05	1.46E-04
	HDDV	10.31	1,188,914.44	13.51	3.70E-02
	MC	0.78	99,076.20	0.09	2.33E-04
Total 2000 NOx:				2,720.97	7.45

TABLE 2-10. 2002 NOX EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	2.27	221,704,449.17	554.85	1.52E+00
	LDGT1	2.76	70,741,222.27	215.26	5.90E-01
	LDGT2	3.80	31,359,510.90	131.38	3.60E-01
	HDGV	6.33	11,304,009.74	78.89	2.16E-01
	LDDV	2.08	364,645.48	0.84	2.29E-03
	LDDT	2.30	729,290.95	1.85	5.07E-03
	HDDV	15.54	26,254,474.24	449.81	1.23E+00
	MC	1.69	2,187,872.85	4.08	1.12E-02
Interstate: Urban (66.8 mph)	LDGV	2.27	0.00	0.00	0.00E+00
	LDGT1	2.76	0.00	0.00	0.00E+00
	LDGT2	3.80	0.00	0.00	0.00E+00
	HDGV	6.33	0.00	0.00	0.00E+00
	LDDV	2.08	0.00	0.00	0.00E+00
	LDDT	2.30	0.00	0.00	0.00E+00
	HDDV	15.54	0.00	0.00	0.00E+00
	MC	1.69	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	2.00	9,327,441.78	20.57	5.63E-02
	LDGT1	2.38	2,976,190.31	7.81	2.14E-02
	LDGT2	3.28	1,319,342.09	4.77	1.31E-02
	HDGV	6.09	475,576.80	3.19	8.75E-03
	LDDV	1.64	15,341.19	0.03	7.60E-05
	LDDT	1.81	30,682.37	0.06	1.68E-04
	HDDV	12.27	1,104,565.47	14.94	4.09E-02
	MC	1.48	92,047.12	0.15	4.11E-04
Principal Arterial: Urban (49.1 mph)	LDGV	1.53	19,324,101.51	32.60	8.93E-02
	LDGT1	1.74	6,165,913.97	11.83	3.24E-02
	LDGT2	2.39	2,733,343.31	7.20	1.97E-02
	HDGV	5.69	985,274.91	6.18	1.69E-02
	LDDV	1.23	31,783.06	0.04	1.18E-04
	LDDT	1.36	63,566.12	0.10	2.61E-04
	HDDV	9.20	2,288,380.44	23.21	6.36E-02
	MC	1.13	190,698.37	0.24	6.51E-04
Minor Arterial: Rural (59.1 mph)	LDGV	2.00	62,395,904.47	137.58	3.77E-01
	LDGT1	2.38	19,909,219.52	52.24	1.43E-01
	LDGT2	3.28	8,825,736.49	31.92	8.74E-02
	HDGV	6.09	3,181,370.13	21.36	5.85E-02
	LDDV	1.64	102,624.84	0.19	5.08E-04
	LDDT	1.81	205,249.69	0.41	1.12E-03
	HDDV	12.27	7,388,988.69	99.96	2.74E-01
	MC	1.48	615,749.06	1.00	2.75E-03
Minor Arterial: Urban (49.1 mph)	LDGV	1.53	28,583,321.20	48.22	1.32E-01
	LDGT1	1.74	9,120,336.04	17.50	4.79E-02
	LDGT2	2.39	4,043,035.56	10.65	2.92E-02
	HDGV	5.69	1,457,373.28	9.14	2.50E-02
	LDDV	1.23	47,012.04	0.06	1.75E-04
	LDDT	1.36	94,024.08	0.14	3.86E-04

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	HDDV	9.20	3,384,866.98	34.33	9.41E-02
	MC	1.13	282,072.25	0.35	9.63E-04
Major Collector: Rural (53.9 mph)	LDGV	1.75	83,180,669.49	160.49	4.40E-01
	LDGT1	2.05	26,541,200.46	59.99	1.64E-01
	LDGT2	2.82	11,765,686.80	36.58	1.00E-01
	HDGV	5.88	4,241,119.66	27.49	7.53E-02
	LDDV	1.39	136,810.31	0.21	5.74E-04
	LDDT	1.53	273,620.62	0.46	1.26E-03
	HDDV	10.37	9,850,342.44	112.62	3.09E-01
	MC	1.30	820,861.87	1.18	3.22E-03
	LDGV	1.37	7,047,593.09	10.64	2.92E-02
Major/Minor Collector: Urban (19.6 mph)	LDGT1	1.61	2,248,738.59	3.99	1.09E-02
	LDGT2	2.20	996,863.50	2.42	6.62E-03
	HDGV	4.52	359,334.52	1.79	4.91E-03
	LDDV	1.20	11,591.44	0.02	4.20E-05
	LDDT	1.33	23,182.87	0.03	9.31E-05
	HDDV	8.99	834,583.39	8.27	2.27E-02
	MC	0.78	69,548.62	0.06	1.64E-04
	LDGV	1.75	7,187,157.98	13.87	3.80E-02
Minor Collector: Rural (53.9 mph)	LDGT1	2.05	2,293,270.80	5.18	1.42E-02
	LDGT2	2.82	1,016,604.58	3.16	8.66E-03
	HDGV	5.88	366,450.49	2.38	6.51E-03
	LDDV	1.39	11,820.98	0.02	4.96E-05
	LDDT	1.53	23,641.97	0.04	1.09E-04
	HDDV	10.37	851,110.81	9.73	2.67E-02
	MC	1.30	70,925.90	0.10	2.79E-04
	LDGV	1.44	36,797,451.32	58.42	1.60E-01
Local: Rural (30.5 mph)	LDGT1	1.64	11,741,292.03	21.23	5.82E-02
	LDGT2	2.25	5,204,902.65	12.91	3.54E-02
	HDGV	4.95	1,876,185.84	10.24	2.81E-02
	LDDV	1.05	60,522.12	0.07	1.92E-04
	LDDT	1.16	121,044.25	0.15	4.24E-04
	HDDV	7.85	4,357,592.92	37.71	1.03E-01
	MC	0.95	363,132.74	0.38	1.04E-03
	LDGV	1.37	10,651,141.00	16.09	4.41E-02
Local: Urban (19.6 mph)	LDGT1	1.61	3,398,554.86	6.03	1.65E-02
	LDGT2	2.20	1,506,575.87	3.65	1.00E-02
	HDGV	4.52	543,068.04	2.71	7.41E-03
	LDDV	1.20	17,518.32	0.02	6.35E-05
	LDDT	1.33	35,036.65	0.05	1.41E-04
	HDDV	8.99	1,261,319.33	12.50	3.43E-02
	MC	0.78	105,109.94	0.09	2.48E-04
Total 2002 NOx:				2,677.91	7.34

TABLE 2-11. 2012 NOX EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (72.0 mph)	LDGV	1.92	350,705,253	742.04	2.03E+00
	LDGT1	2.33	118,015,101	303.02	8.30E-01
	LDGT2	3.50	56,224,176	216.86	5.94E-01
	HDGV	5.49	5,566,750	33.68	9.23E-02
	LDDV	1.87	4,453,400	9.18	2.51E-02
	LDDT	2.11	1,113,350	2.59	7.09E-03
	HDDV	9.11	18,370,275	184.42	5.05E-01
	MC	1.69	2,226,700	4.15	1.14E-02
Interstate: Urban (- mph)	LDGV				0.00E+00
	LDGT1				0.00E+00
	LDGT2				0.00E+00
	HDGV				0.00E+00
	LDDV				0.00E+00
	LDDT				0.00E+00
	HDDV				0.00E+00
	MC				0.00E+00
Principal Arterial: Rural (53.0 mph)	LDGV	1.47	11,865,190	19.22	5.27E-02
	LDGT1	1.69	3,992,731	7.44	2.04E-02
	LDGT2	2.54	1,902,197	5.32	1.46E-02
	HDGV	5.07	188,336	1.05	2.88E-03
	LDDV	1.21	150,669	0.20	5.50E-04
	LDDT	1.37	37,667	0.06	1.56E-05
	HDDV	5.93	621,510	4.06	1.11E-02
	MC	1.26	75,335	0.10	2.87E-04
Principal Arterial: Urban (49.1 mph)	LDGV				
	LDGT1				
	LDGT2				
	HDGV				
	LDDV				
	LDDT				
	HDDV				
	MC				
Minor Arterial: Rural (54.2 mph)	LDGV	1.52	65,207,381	109.22	2.99E-01
	LDGT1	1.76	21,942,801	42.56	1.17E-02
	LDGT2	2.64	10,453,882	30.41	8.33E-02
	HDGV	5.12	1,035,038	5.84	1.60E-02
	LDDV	1.26	828,030	1.15	3.15E-03
	LDDT	1.42	207,008	0.32	8.87E-04
	HDDV	6.14	3,415,625	23.11	6.33E-02
	MC	1.31	414,015	0.60	1.64E-03
Minor Arterial: Urban (26.3 mph)	LDGV	1.23	26,752,153	36.26	9.93E-02
	LDGT1	1.42	9,002,312	14.09	3.86E-02
	LDGT2	2.13	4,288,837	10.07	2.76E-02
	HDGV	4.15	424,637	1.94	5.32E-03
	LDDV	0.97	339,710	0.36	9.95E-04
	LDDT	1.10	84,927	0.10	2.82E-05

Road Class	Vehicle Type	Emission Factor(g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	HDDV	4.75	1,401,303	7.34	2.01E-02
	MC	0.89	169,855	0.17	4.56E-04
Major Collector: Rural (52.4 mph)	LDGV	1.45	82,049,379	131.11	3.59E-01
	LDGT1	1.66	27,610,267	50.51	1.38E-01
	LDGT2	2.49	13,153,948	36.09	9.89E-02
	HDGV	5.05	1,302,371	7.25	1.99E-02
	LDDV	1.20	1,041,897	1.38	3.77E-03
	LDDT	1.35	260,474	0.39	1.06E-03
	HDDV	5.84	4,297,825	27.66	7.58E-02
	MC	1.24	520,948	0.71	1.95E-03
Major/Minor Collector: Urban (24.9 mph)	LDGV	1.23	18,947,880	25.68	7.04E-02
	LDGT1	1.41	6,376,112	9.91	2.71E-02
	LDGT2	2.12	3,037,676	7.10	1.94E-02
	HDGV	4.10	300,760	1.36	3.72E-03
	LDDV	0.99	240,608	0.26	7.19E-04
	LDDT	1.12	60,154	0.07	2.03E-05
	HDDV	4.83	992,508	5.28	1.45E-02
	MC	0.86	120,304	0.11	3.12E-04
Minor Collector: Rural (50.0 mph)	LDGV	1.36	8,433,646	12.64	3.46E-02
	LDGT1	1.53	2,837,989	4.79	1.31E-03
	LDGT2	2.30	1,352,061	3.43	9.39E-03
	HDGV	4.97	133,867	0.73	2.01E-03
	LDDV	1.13	107,094	0.13	3.65E-04
	LDDT	1.27	26,773	0.04	1.03E-05
	HDDV	5.50	441,762	2.68	7.34E-03
	MC	1.16	53,547	0.07	1.88E-04
Local: Rural (30.0 mph)	LDGV	1.25	51,595,031	71.07	1.95E-01
	LDGT1	1.42	17,362,138	27.17	7.44E-02
	LDGT2	2.13	8,271,584	19.42	5.32E-02
	HDGV	4.28	818,969	3.86	1.06E-03
	LDDV	0.94	655,175	0.68	1.86E-03
	LDDT	1.07	163,794	0.19	5.29E-04
	HDDV	4.61	2,702,597	13.73	3.76E-02
	MC	0.94	327,588	0.34	9.30E-04
Local: Urban (15.0 mph)	LDGV	1.22	16,687,931	22.44	6.15E-02
	LDGT1	1.45	5,615,621	8.97	2.46E-02
	LDGT2	2.17	2,675,367	6.40	1.75E-02
	HDGV	3.76	264,888	1.10	3.01E-03
	LDDV	1.20	211,910	0.28	7.68E-04
	LDDT	1.36	52,978	0.08	2.18E-05
	HDDV	5.87	874,130	5.65	1.55E-02
	MC	0.72	105,955	0.08	2.30E-04
Total 2012 NOx:				2,327.77	6.38

TABLE 2-12. 2000 CO EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	16.58	208,977,706.83	3,820.00	1.05E+01
	LDGT1	25.08	66,680,386.72	1,843.76	5.05E+00
	LDGT2	36.70	29,559,346.69	1,196.02	3.28E+00
	HDGV	49.04	10,655,113.34	576.09	1.58E+00
	LDDV	0.95	343,713.33	0.36	9.86E-04
	LDDT	1.05	687,426.67	0.80	2.18E-03
	HDDV	6.99	24,747,360.02	190.71	5.23E-01
	MC	32.58	2,062,280.00	74.08	2.03E-01
Interstate: Urban (66.8 mph)	LDGV	16.58	0.00	0.00	0.00E+00
	LDGT1	25.08	0.00	0.00	0.00E+00
	LDGT2	36.70	0.00	0.00	0.00E+00
	HDGV	49.04	0.00	0.00	0.00E+00
	LDDV	0.95	0.00	0.00	0.00E+00
	LDDT	1.05	0.00	0.00	0.00E+00
	HDDV	6.99	0.00	0.00	0.00E+00
	MC	32.58	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	11.33	8,792,008.47	109.82	3.01E-01
	LDGT1	16.57	2,805,344.81	51.25	1.40E-01
	LDGT2	23.92	1,243,606.46	32.80	8.99E-02
	HDGV	39.07	448,276.75	19.31	5.29E-02
	LDDV	0.82	14,460.54	0.01	3.58E-05
	LDDT	0.90	28,921.08	0.03	7.86E-05
	HDDV	6.04	1,041,158.90	6.93	1.90E-02
	MC	19.00	86,763.24	1.82	4.98E-03
Principal Arterial: Urban (49.1 mph)	LDGV	7.68	18,214,819.03	154.23	4.23E-01
	LDGT1	10.65	5,811,965.28	68.24	1.87E-01
	LDGT2	15.04	2,576,438.22	42.72	1.17E-01
	HDGV	31.66	928,716.10	32.42	8.88E-02
	LDDV	0.74	29,958.58	0.02	6.70E-05
	LDDT	0.82	59,917.17	0.05	1.48E-04
	HDDV	5.44	2,157,018.04	12.94	3.54E-02
	MC	9.56	179,751.50	1.89	5.19E-03
Minor Arterial: Rural (59.1 mph)	LDGV	11.33	58,814,124.30	734.67	2.01E+00
	LDGT1	16.57	18,766,348.87	342.83	9.39E-01
	LDGT2	23.92	8,319,103.11	219.39	6.01E-01
	HDGV	39.07	2,998,746.47	129.17	3.54E-01
	LDDV	0.82	96,733.76	0.09	2.40E-04
	LDDT	0.90	193,467.51	0.19	5.26E-04
	HDDV	6.04	6,964,830.51	46.38	1.27E-01
	MC	19.00	580,402.54	12.16	3.33E-02
Minor Arterial: Urban (49.1 mph)	LDGV	7.68	26,942,521.63	228.13	6.25E-01
	LDGT1	10.65	8,596,791.44	100.94	2.77E-01
	LDGT2	15.04	3,810,948.78	63.19	1.73E-01
	HDGV	31.66	1,373,714.10	47.95	1.31E-01
	LDDV	0.74	44,313.36	0.04	9.90E-05
	LDDT	0.82	88,626.72	0.08	2.20E-04

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	HDDV	5.44	3,190,561.77	19.14	5.24E-02
	MC	9.56	265,880.15	2.80	7.68E-03
Major Collector: Rural (53.9 mph)	LDGV	7.68	78,405,758.78	663.88	1.82E+00
	LDGT1	10.65	25,017,626.98	293.75	8.05E-01
	LDGT2	15.04	11,090,288.25	183.89	5.04E-01
	HDGV	34.08	3,997,662.04	150.20	4.12E-01
	LDDV	0.76	128,956.84	0.11	2.96E-04
	LDDT	0.84	257,913.68	0.24	6.54E-04
	HDDV	5.59	9,284,892.49	57.22	1.57E-01
	MC	9.56	773,741.04	8.16	2.23E-02
Major/Minor Collector: Urban (19.6 mph)	LDGV	20.61	6,643,032.42	150.95	4.14E-01
	LDGT1	24.29	2,119,651.79	56.76	1.56E-01
	LDGT2	33.39	939,639.45	34.59	9.48E-02
	HDGV	61.36	338,707.25	22.90	6.27E-02
	LDDV	1.57	10,926.04	0.02	5.18E-05
	LDDT	1.73	21,852.08	0.04	1.14E-04
	HDDV	11.53	786,674.89	10.00	2.74E-02
	MC	24.40	65,556.24	1.76	4.83E-03
Minor Collector: Rural (53.9 mph)	LDGV	7.68	6,774,585.71	57.36	1.57E-01
	LDGT1	10.65	2,161,627.68	25.38	6.95E-02
	LDGT2	15.04	958,247.32	15.89	4.35E-02
	HDGV	34.08	345,414.73	12.98	3.56E-02
	LDDV	0.76	11,142.41	0.01	2.56E-05
	LDDT	0.84	22,284.82	0.02	5.65E-05
	HDDV	5.59	802,253.57	4.94	1.35E-02
	MC	9.56	66,854.46	0.70	1.93E-03
Local: Rural (30.5 mph)	LDGV	12.78	34,685,127.08	488.71	1.34E+00
	LDGT1	16.03	11,067,293.84	195.59	5.36E-01
	LDGT2	22.30	4,906,119.95	120.62	3.30E-01
	HDGV	38.45	1,768,485.10	74.97	2.05E-01
	LDDV	0.99	57,047.91	0.06	1.71E-04
	LDDT	1.09	114,095.81	0.14	3.76E-04
	HDDV	7.26	4,107,449.26	32.88	9.01E-02
	MC	15.27	342,287.44	5.76	1.58E-02
Local: Urban (19.6 mph)	LDGV	20.61	10,039,721.94	228.13	6.25E-01
	LDGT1	24.29	3,203,463.91	85.79	2.35E-01
	LDGT2	33.39	1,420,092.25	52.28	1.43E-01
	HDGV	61.39	511,893.72	34.61	9.48E-02
	LDDV	1.57	16,512.70	0.03	7.83E-05
	LDDT	1.73	33,025.40	0.06	1.73E-04
	HDDV	11.53	1,188,914.44	15.11	4.14E-02
	MC	24.40	99,076.20	2.67	7.30E-03
Total 2000 CO:					36.40

TABLE 2-13. 2002 CO EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (66.8 mph)	LDGV	14.47	221,704,449.17	3,536.89	9.69E+00
	LDGT1	20.85	70,741,222.27	1,626.14	4.46E+00
	LDGT2	30.77	31,359,510.90	1,063.84	2.91E+00
	HDGV	38.02	11,304,009.74	473.83	1.30E+00
	LDDV	0.91	364,645.48	0.37	1.00E-03
	LDDT	1.00	729,290.95	0.80	2.20E-03
	HDDV	6.91	26,254,474.24	200.01	5.48E-01
	MC	32.58	2,187,872.85	78.59	2.15E-01
Interstate: Urban (66.8 mph)	LDGV	14.47	0.00	0.00	0.00E+00
	LDGT1	20.85	0.00	0.00	0.00E+00
	LDGT2	30.77	0.00	0.00	0.00E+00
	HDGV	38.02	0.00	0.00	0.00E+00
	LDDV	0.91	0.00	0.00	0.00E+00
	LDDT	1.00	0.00	0.00	0.00E+00
	HDDV	6.91	0.00	0.00	0.00E+00
	MC	32.58	0.00	0.00	0.00E+00
Principal Arterial: Rural (59.1 mph)	LDGV	10.06	9,327,441.78	103.45	2.83E-01
	LDGT1	14.19	2,976,190.31	46.56	1.28E-01
	LDGT2	20.63	1,319,342.09	30.01	8.22E-02
	HDGV	30.30	475,576.80	15.89	4.35E-02
	LDDV	0.78	15,341.19	0.01	3.61E-05
	LDDT	0.86	30,682.37	0.03	7.97E-05
	HDDV	5.96	1,104,565.47	7.26	1.99E-02
	MC	19.00	92,047.12	1.93	5.28E-03
Principal Arterial: Urban (49.1 mph)	LDGV	6.99	19,324,101.51	148.92	4.08E-01
	LDGT1	9.57	6,165,913.97	65.06	1.78E-01
	LDGT2	13.59	2,733,343.31	40.95	1.12E-01
	HDGV	24.55	985,274.91	26.67	7.31E-02
	LDDV	0.70	31,783.06	0.02	6.72E-05
	LDDT	0.78	63,566.12	0.05	1.50E-04
	HDDV	5.37	2,288,380.44	13.55	3.71E-02
	MC	9.56	190,698.37	2.01	5.51E-03
Minor Arterial: Rural (59.1 mph)	LDGV	10.06	62,395,904.47	692.04	1.90E+00
	LDGT1	14.19	19,909,219.52	311.47	8.53E-01
	LDGT2	20.63	8,825,736.49	200.74	5.50E-01
	HDGV	30.30	3,181,370.13	106.28	2.91E-01
	LDDV	0.78	102,624.84	0.09	2.42E-04
	LDDT	0.86	205,249.69	0.19	5.33E-04
	HDDV	5.96	7,388,988.69	48.55	1.33E-01
	MC	19.00	615,749.06	12.90	3.53E-02
Minor Arterial: Urban (49.1 mph)	LDGV	6.99	28,583,321.20	220.28	6.03E-01
	LDGT1	9.57	9,120,336.04	96.23	2.64E-01
	LDGT2	13.59	4,043,035.56	60.58	1.66E-01
	HDGV	24.55	1,457,373.28	39.45	1.08E-01
	LDDV	0.70	47,012.04	0.04	9.94E-05
	LDDT	0.78	94,024.08	0.08	2.22E-04
	HDDV	5.37	3,384,866.98	20.04	5.49E-02

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	MC	9.56	282,072.25	2.97	8.15E-03
Major Collector: Rural (53.9 mph)	LDGV	6.99	83,180,669.49	641.03	1.76E+00
	LDGT1	9.57	26,541,200.46	280.03	7.67E-01
	LDGT2	13.59	11,765,686.80	176.28	4.83E-01
	HDGV	26.42	4,241,119.66	123.54	3.38E-01
	LDDV	0.72	136,810.31	0.11	2.98E-04
	LDDT	0.80	273,620.62	0.24	6.61E-04
	HDDV	5.52	9,850,342.44	59.95	1.64E-01
	MC	9.56	820,861.87	8.65	2.37E-02
Major/Minor Collector: Urban (19.6 mph)	LDGV	20.40	7,047,593.09	158.51	4.34E-01
	LDGT1	23.61	2,248,738.59	58.53	1.60E-01
	LDGT2	32.57	996,863.50	35.80	9.81E-02
	HDGV	47.58	359,334.52	18.85	5.16E-02
	LDDV	1.49	11,591.44	0.02	5.22E-05
	LDDT	1.65	23,182.87	0.04	1.16E-04
	HDDV	11.39	834,583.39	10.48	2.87E-02
	MC	24.40	69,548.62	1.87	5.13E-03
Minor Collector: Rural (53.9 mph)	LDGV	6.99	7,187,157.98	55.39	1.52E-01
	LDGT1	9.57	2,293,270.80	24.20	6.63E-02
	LDGT2	13.59	1,016,604.58	15.23	4.17E-02
	HDGV	26.42	366,450.49	10.67	2.92E-02
	LDDV	0.72	11,820.98	0.01	2.57E-05
	LDDT	0.80	23,641.97	0.02	5.71E-05
	HDDV	5.52	851,110.81	5.18	1.42E-02
	MC	9.56	70,925.90	0.75	2.05E-03
Local: Rural (30.5 mph)	LDGV	12.28	36,797,451.32	498.19	1.36E+00
	LDGT1	15.12	11,741,292.03	195.72	5.36E-01
	LDGT2	21.11	5,204,902.65	121.14	3.32E-01
	HDGV	29.81	1,876,185.84	61.66	1.69E-01
	LDDV	0.94	60,522.12	0.06	1.72E-04
	LDDT	1.04	121,044.25	0.14	3.80E-04
	HDDV	7.17	4,357,592.92	34.45	9.44E-02
	MC	15.27	363,132.74	6.11	1.67E-02
Local: Urban (19.6 mph)	LDGV	20.40	10,651,141.00	239.55	6.56E-01
	LDGT1	23.61	3,398,554.86	88.46	2.42E-01
	LDGT2	32.57	1,506,575.87	54.10	1.48E-01
	HDGV	47.58	543,068.04	28.49	7.80E-02
	LDDV	1.49	17,518.32	0.03	7.88E-05
	LDDT	1.65	35,036.65	0.06	1.75E-04
	HDDV	11.39	1,261,319.33	15.84	4.34E-02
	MC	24.40	105,109.94	2.83	7.75E-03
Total 2002 CO:				12,326.98	33.77

TABLE 2-14. 2012 CO EMISSIONS BY ROAD CLASS AND VEHICLE TYPE

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
Interstate: Rural (72.0 mph)	LDGV	10.58	350,705,253	4088.93	1.12E+01
	LDGT1	13.31	118,015,101	1731.00	4.74E+00
	LDGT2	19.94	56,224,176	1235.46	3.38E+00
	HDGV	18.61	5,566,750	114.16	3.13E-01
	LDDV	0.87	4,453,400	4.27	1.17E-02
	LDDT	0.96	1,113,350	1.18	3.23E-03
	HDDV	6.78	18,370,275	19.03	5.21E-02
	MC	32.58	2,226,700	14.85	4.07E-02
Interstate: Urban (72.0- mph)	LDGV				
	LDGT1				
	LDGT2				
	HDGV				
	LDDV				
	LDDT				
	HDDV				
	MC				
Principal Arterial: Rural (53.0 mph)	LDGV	5.52	11,865,190	72.18	1.98E-01
	LDGT1	7.35	3,992,731	32.34	8.86E-02
	LDGT2	11.00	1,902,197	23.06	6.32E-02
	HDGV	12.71	188,336	2.64	7.23E-03
	LDDV	0.69	150,669	0.04	3.01E-04
	LDDT	0.76	37,667	0.03	8.22E-05
	HDDV	5.37	621,510	3.68	1.01E-02
	MC	9.56	75,335	0.79	2.16E-03
Principal Arterial: Urban (49.1 mph)	LDGV				
	LDGT1				
	LDGT2				
	HDGV				
	LDDV				
	LDDT				
	HDDV				
	MC				
Minor Arterial: Rural (54.2 mph)	LDGV	5.52	65,207,381	396.66	1.09E+00
	LDGT1	7.35	21,942,801	177.73	4.87E-01
	LDGT2	11.00	10,453,882	126.72	3.47E-01
	HDGV	13.02	1,035,038	14.85	4.07E-02
	LDDV	0.69	828,030	0.63	1.73E-03
	LDDT	0.77	207,008	0.18	4.93E-04
	HDDV	5.43	3,415,625	20.44	5.60E-02
	MC	9.56	414,015	4.36	1.19E-02
Minor Arterial: Urban (26.3 mph)	LDGV	12.96	26,752,153	382.07	1.05E+00
	LDGT1	15.28	9,002,312	151.59	4.15E-01
	LDGT2	22.82	4,288,837	107.85	2.95E-01
	HDGV	16.94	424,637	7.93	2.17E-02
	LDDV	1.05	339,710	0.39	1.07E-03
	LDDT	1.16	84,927	0.11	3.01E-04
	HDDV	8.2	1,401,303	12.66	3.47E-02

Road Class	Vehicle Type	Emission Factor (g/mi)	Annual VMT	Emissions (tons/year)	Emissions (tons/day)
	MC	18.06	169,855	3.48	9.26E-03
Major Collector: Rural (52.4 mph)	LDGV	5.52	82,049,379	499.11	1.37E+00
	LDGT1	7.35	27,610,267	223.63	6.13E-01
	LDGT2	11.00	13,153,948	159.45	4.37E-01
	HDGV	12.57	1,302,371	18.04	4.94E-02
	LDDV	0.68	1,041,897	0.78	2.14E-03
	LDDT	0.76	260,474	0.22	6.03E-04
	HDDV	5.35	4,297,825	25.34	6.94E-02
	MC	9.56	520,948	5.49	1.50E-02
Major/Minor Collector: Urban (24.9 mph)	LDGV	13.89	18,947,880	290.03	7.95E-01
	LDGT1	16.26	6,376,112	114.25	3.13E-01
	LDGT2	24.29	3,037,676	81.31	2.23E-01
	HDGV	17.96	300,760	5.95	1.63E-02
	LDDV	1.11	240,608	0.29	7.95E-04
	LDDT	1.23	60,154	0.08	2.19E-04
	HDDV	8.69	992,508	9.50	2.60E-02
	MC	19.16	120,304	2.54	6.96E-03
Minor Collector: Rural (50.0 mph)	LDGV	5.52	8,433,646	51.30	1.41E-01
	LDGT1	7.35	2,837,989	22.99	6.30E-02
	LDGT2	11.00	1,352,061	16.39	4.49E-02
	HDGV	12.14	133,867	1.79	4.90E-03
	LDDV	0.67	107,094	0.08	2.19E-04
	LDDT	0.75	26,773	0.02	5.48E-05
	HDDV	5.28	441,762	2.57	7.04E-03
	MC	9.56	53,547	0.56	1.53E-03
Local: Rural (30.0 mph)	LDGV	10.93	51,595,031	90.40	1.70E+00
	LDGT1	13.11	17,362,138	36.54	6.87E-01
	LDGT2	19.60	8,271,584	23.70	4.89E-01
	HDGV	14.83	818,969	3.10	3.67E-02
	LDDV	0.91	655,175	0.26	1.81E-03
	LDDT	1.01	163,794	0.09	4.93E-04
	HDDV	7.16	2,702,597	4.44	5.84E-02
	MC	15.57	327,588	2.04	1.54E-02
Local: Urban (15.0 mph)	LDGV	21.43	16,687,931	47.08	1.08E+00
	LDGT1	24.22	5,615,621	18.19	4.11E-01
	LDGT2	36.15	2,675,367	12.12	2.92E-01
	HDGV	30.69	264,888	1.64	2.45E-02
	LDDV	1.85	211,910	0.14	1.18E-03
	LDDT	2.05	52,978	0.05	3.29E-04
	HDDV	14.49	874,130	2.43	3.82E-02
	MC	31.83	105,955	0.76	1.02E-02
Total 2012 CO:				10526.00	28.8

2.5 MOTOR VEHICLE EMISSIONS BUDGET

Pursuant to the EPA transportation conformity rule at 40 CFR Part 93, specific emission budgets are hereby defined for the on-road mobile sources portion of the emissions inventory. These budgets are to be used by the South Carolina Department of Transportation (SCDOT) and transportation authorities to assure that transportation plans, programs, and projects are consistent with, and conform to, the long-term maintenance of acceptable air quality in the Cherokee County area. Specific emissions budgets are set for VOC and NOx as follow:

Motor Vehicle Emissions Budget: VOC TPD - 4.59; NOx TPD - 6.38

The above budgets are consistent with the plan for maintaining total emissions from all source categories at or below the 1990 VOC and NOx emissions levels through the year 2012. For future conformity determinations, SC DOT and transportation authorities should continue to rely on the above budgets until this long-term maintenance plan is revised

APPENDIX A

MOBILE 5a INPUT FILES

1 PROMPT
CHEROKEE COUNTY, PROJECTION BUDGET WITH PHASE I & II RVP ONLY
1 TAMFLG
1 SPDFLG
3 VMFLAG
1 MYMRFG
1 NEWFLG
1 IMFLAG
1 ALHFLG
1 ATPFLG
1 RLFLAG
2 LOCFLG
1 TEMFLG - calculate exhaust temperatures
4 OUTFMT
4 PRTFLG
1 IDLFLG
3 NMHFLG VOC selected
1 HCFLAG
.630.212.101.010.008.002.033.004

PROMPT

CHEROKEE COUNTY PROJECTION BUDGET WITH PHASE I & II RVP ONLY

1 TAMFLG
1 SPDFLG
3 VMFLAG
1 MYMRFG
1 NEWFLG
1 IMFLAG
1 ALHFLG
1 ATPFLG
1 RLFLAG
2 LOCFLG
1 TEMFLG - calculate exhaust temperatures
4 OUTFMT
4 PRTFLG
1 IDLFLG
3 NMHFLG VOC selected
1 HCFLAG

.630.212.101.010.008.002.033.004
CEROKEE BASE 64. 94. 9.0 09.0 20 LAP rec:
SCNAME,RVPAST,TEMMIN,TEMMAX,RVPBAS,RVPIUS,IUSESY
1 02 66.6 83.5 20.6 27.3 20.6 07 1st req sc rec: IREJN,ICY,SPD(1),AMBT,PCCN,PCHC,PCCC
1 02 59.1 83.5 20.6 27.3 20.6 07 1st req sc rec: IREJN ICY SPD(1) AMBT PCCN PCHC PCCC

```

1 02 53.9 83.5 20.6 27.3 20.6 07
1 02 49.1 83.5 20.6 27.3 20.6 07
1 02 30.5 83.5 20.6 27.3 20.6 07
1 02 19.6 83.5 20.6 27.3 20.6 07
00000000000000000000000000000000

```

```
1st req sc rec: IREJN,ICY,SPD(1),AMBT,PCCN,PCHC,PCCC  
00000000000000000000000000000000000000000000000000000
```

5 PROMPT

Maint. Plan 2012 Update - Cherokee Includes New HDDV BERs & NLEV

1 TAMFLG
1 SPDFLG
3 VMFFLG
1 MYMRFG
2 NEWFLG
1 IMFLAG
1 ALHFLG
1 ATPFLG
1 RLFLAG
2 LOCFLG
1 TEMFLG
4 OUTFLG
4 PRTFLG
1 IDLFLG
3 NMHFLG VOC Selected
1 HCFFLAG
.630.212.101.010.008.002.033.004

004

1 7 3 90 90 05.639 00.00 BER sub for HDDV
1 7 3 91 97 04.598 00.00
1 7 3 98 03 03.679 00.00
1 7 3 04 20 01.840 00.00
CHEROKEE UPDATE 64. 94. 09.0 09.0 20 LAP REC
4 12 65.0 83.5 20.6 27.3 20.6 07
01 1
4 12 52.4 83.5 20.6 27.3 20.6 07
01 1
4 12 54.2 83.5 20.6 27.3 20.6 07
01 1
4 12 53.0 83.5 20.6 27.3 20.6 07
01 1
4 12 50.0 83.5 20.6 27.3 20.6 07
01 1
4 12 30.0 83.5 20.6 27.3 20.6 07
01 1
4 12 26.3 83.5 20.6 27.3 20.6 07
01 1
4 12 24.9 83.5 20.6 27.3 20.6 07
01 1
4 12 21.6 83.5 20.6 27.3 20.6 07
01 1
4 12 15.0 83.5 20.6 27.3 20.6 07
01 1

NLEVSTD.D NLEV MATRIX INPUT FILE

APPENDIX B

MOBILE 5a OUTPUT FILES

CHEROKEE COUNTY, MAINTENANCE PLAN 2000 PROJECTED EMISSIONS BUDGET

Using MOBILE5a (26-Mar-93)

Run on 4/9/98 by Todd Barrett

-M 96 Warning:

+ 66.6 speed reduced to 65 mph maximum

0 CHEROKEE BASE

Minimum Temp: 64. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Yr: 2020

0VOC HC emission factors include evaporative HC emission factors.

0

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

+
Veh. Spd.: 65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0
VMT Mix: 0.630 0.212 0.101 0.010 0.008 0.002 0.033 0.004

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.67 2.16 2.84 2.38 4.36 0.28 0.37 0.99 6.05 1.90
Exhst CO: 16.58 25.08 36.70 28.83 49.04 0.95 1.05 6.99 32.58 20.33
Exhst NOX: 2.39 2.90 4.00 3.26 6.61 2.30 2.52 17.84 1.69 3.21

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

+
Veh. Spd.: 59.1 59.1 59.1 59.1 59.1 59.1 59.1 59.1 59.1
VMT Mix: 0.630 0.212 0.101 0.010 0.008 0.002 0.033 0.004

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.53 1.95 2.53 2.14 4.38 0.28 0.37 0.99 5.60 1.73
Exhst CO: 11.33 16.57 23.92 18.94 39.07 0.82 0.90 6.04 19.00 13.74
Exhst NOX: 2.09 2.50 3.44 2.81 6.37 1.82 1.99 14.08 1.48 2.75

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

+
Veh. Spd.: 53.9 53.9 53.9 53.9 53.9 53.9 53.9 53.9 53.9
VMT Mix: 0.630 0.212 0.101 0.010 0.008 0.002 0.033 0.004

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.44 1.82 2.33 1.98 4.46 0.29 0.38 1.02 5.30 1.63
Exhst CO: 7.68 10.65 15.04 12.07 34.08 0.76 0.84 5.59 9.56 9.19
Exhst NOX: 1.83 2.15 2.95 2.41 6.15 1.54 1.68 11.91 1.30 2.38

**CHEROKEE COUNTY, MAINTENANCE PLAN
2002 PROJECTED EMISSIONS BUDGET**

Using MOBILE5a (26-Mar-93)
Run on 4/9/98 by Todd Barrett

-M 96 Warning:
+ 66.6 speed reduced to 65 mph maximum
OCHEROKEE BASE
Minimum Temp: 64. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Yr: 2020
0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+ Veh. Spd.:	65.0	65.0	65.0		65.0	65.0	65.0	65.0	65.0	
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004	

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.56 1.98 2.62 2.19 3.83 0.25 0.34 0.96 6.05 1.76
Exhst CO: 14.47 20.85 30.77 24.05 38.02 0.91 1.00 6.91 32.58 17.39
Exhst NOX: 2.27 2.76 3.80 3.10 6.33 2.08 2.30 15.54 1.69 3.00

0Emission factors are as of July 1st of the indicated calendar year.
0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+ Veh. Spd.:	59.1	59.1	59.1		59.1	59.1	59.1	59.1	59.1	
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004	

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.43 1.81 2.36 1.99 3.85 0.25 0.34 0.97 5.60 1.62
Exhst CO: 10.06 14.19 20.63 16.27 30.30 0.78 0.86 5.96 19.00 12.01
Exhst NOX: 2.00 2.38 3.28 2.67 6.09 1.64 1.81 12.27 1.48 2.58

0Emission factors are as of July 1st of the indicated calendar year.
0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+ Veh. Spd.:	53.9	53.9	53.9		53.9	53.9	53.9	53.9	53.9	
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004	

0Composite Emission Factors (Gm/Mile)
VOC HC: 1.36 1.70 2.20 1.86 3.92 0.26 0.35 0.99 5.30 1.53
Exhst CO: 6.99 9.57 13.59 10.86 26.42 0.72 0.80 5.52 9.56 8.30
Exhst NOX: 1.75 2.05 2.82 2.30 5.88 1.39 1.53 10.37 1.30 2.24

Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
 Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
 Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh	
Veh. Spd.:	49.1	49.1	49.1		49.1	49.1	49.1	49.1	49.1		
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004		
0Composite Emission Factors (Gm/Mile)											
VOC	HC:	1.39	1.74	2.24	1.90	4.02	0.27	0.36	1.04	5.30	1.57
Exhst CO:		6.99	9.57	13.59	10.86	24.55	0.70	0.78	5.37	9.56	8.27
Exhst NOX:		1.53	1.74	2.39	1.95	5.69	1.23	1.36	9.20	1.13	1.95

Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
 Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
 Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh	
Veh. Spd.:	30.5	30.5	30.5		30.5	30.5	30.5	30.5	30.5		
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004		
0Composite Emission Factors (Gm/Mile)											
VOC	HC:	1.90	2.22	2.93	2.45	4.98	0.40	0.53	1.51	5.63	2.09
Exhst CO:		12.28	15.12	21.11	17.05	29.81	0.94	1.04	7.17	15.27	13.68
Exhst NOX:		1.44	1.64	2.25	1.84	4.95	1.05	1.16	7.85	0.95	1.80

Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2002 Region: Low Altitude: 500. Ft.
 I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
 Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
 Reformulated Gas: No

0Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh	
Veh. Spd.:	19.6	19.6	19.6		19.6	19.6	19.6	19.6	19.6		
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004		
0Composite Emission Factors (Gm/Mile)											
VOC	HC:	2.59	2.93	3.94	3.26	6.57	0.57	0.75	2.16	6.14	2.82
Exhst CO:		20.40	23.61	32.57	26.50	47.58	1.49	1.65	11.39	24.40	22.11
Exhst NOX:		1.37	1.61	2.20	1.80	4.52	1.20	1.33	8.99	0.78	1.78

CHEROKEE COUNTY, MAINTENANCE PLAN

2012 PROJECTED EMISSIONS BUDGET

Using MOBILE5a (26-Mar-93)

Maint. Plan 2012 Update - Cherokee County - Includes New HDDV BERs & NLEV
MOBILE5a (26-Mar-93)

0 Emission Factor Modification Profile

Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0 CHEROKEE UPDATE

Minimum Temp: 64. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Yr: 2020

0 VOC HC emission factors include evaporative HC emission factors.

0

Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0 User supplied basic exhaust emissions rates.

0 Cal. Year: 2012 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0 Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Veh. Spd.:	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
------------	------	------	------	------	------	------	------	------	------

VMT Mix:	0.630	0.212	0.101	0.010	0.008	0.002	0.033	0.004
----------	-------	-------	-------	-------	-------	-------	-------	-------

ZEV Fract:	0.00%	0.00%
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0 Composite Emission Factors (Gm/Mile)

VOC HC:	1.29	1.61	2.16	1.78	2.63	0.23	0.31	0.94	6.05	1.46
Exhst CO:	10.58	13.31	19.94	15.45	18.61	0.87	0.96	6.78	32.58	12.05
Exhst NOX:	1.92	2.33	3.50	2.71	5.49	1.87	2.11	9.11	1.69	2.44

Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0 User supplied basic exhaust emissions rates.

0 Cal. Year: 2012 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0 Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Veh. Spd.:	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4
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VMT Mix:	0.630	0.212	0.101	0.010	0.008	0.002	0.033	0.004
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ZEV Fract:	0.00%	0.00%
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0 Composite Emission Factors (Gm/Mile)

VOC HC:	1.14	1.45	1.92	1.60	2.71	0.24	0.33	0.98	5.30	1.30
Exhst CO:	5.52	7.35	11.00	8.52	12.57	0.68	0.76	5.35	9.56	6.49
Exhst NOX:	1.45	1.66	2.49	1.93	5.05	1.20	1.35	5.84	1.24	1.78

Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0 User supplied basic exhaust emissions rates.

0 Cal. Year: 2012 Region: Low Altitude: 500. Ft.
I/M Program: No Ambient Temp: 86.6 / 86.6 / 86.6 F
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6
Reformulated Gas: No

0 Veh. Type: LDGV LDGT1 LDGT2 LDGT HDGV LDDV LDDT HDDV MC All Veh

Veh. Spd.:	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2
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VMT Mix:	0.630	0.212	0.101	0.010	0.008	0.002	0.033	0.004
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ZEV Fract:	0.00%	0.00%
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0 Composite Emission Factors (Gm/Mile)

VOC HC:	1.13	1.44	1.90	1.59	2.69	0.23	0.32	0.96	5.30	1.29
Exhst CO:	5.52	7.35	11.00	8.52	13.02	0.69	0.77	5.43	9.56	6.50
Exhst NOX:	1.52	1.76	2.64	2.04	5.12	1.26	1.42	6.14	1.31	1.87

Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0Veh. Type:	Anti-tam. Program: No Reformulated Gas: No				Operating Mode: 20.6 / 27.3 / 20.6					
	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+ Veh. Spd.:	24.9	24.9	24.9		24.9	24.9	24.9	24.9	24.9	
VMT Mix:	0.630	0.212	0.101		0.010	0.008	0.002	0.033	0.004	
ZEV Fract:	0.00%	0.00%								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.81	2.15	2.94	2.40	3.92	0.42	0.58	1.74	5.85	2.02
Exhst CO:	13.89	16.26	24.29	18.86	17.96	1.11	1.23	8.69	19.16	15.20
Exhst NOX:	1.23	1.41	2.12	1.64	4.10	0.99	1.12	4.83	0.86	1.50

0Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates.

0Cal. Year: 2012	Region: Low	Altitude: 500. Ft.								
I/M Program: No	Ambient Temp: 86.6 / 86.6 / 86.6 F									
Anti-tam. Program: No	Operating Mode: 20.6 / 27.3 / 20.6									
Reformulated Gas: No										
0Veh. Type: LDGV LDGT1 LDGT2 LDGT	HDGV LDDV LDDT HDDV MC All Veh									
+ Veh. Spd.: 21.6 21.6 21.6	21.6 21.6 21.6 21.6 21.6									
VMT Mix: 0.630 0.212 0.101	0.010 0.008 0.002 0.033 0.004									
ZEV Fract: 0.00% 0.00%										
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.01	2.36	3.26	2.65	4.31	0.48	0.65	1.95	6.01	2.23
Exhst CO:	16.54	19.10	28.51	22.14	20.96	1.29	1.43	10.10	22.16	17.99
Exhst NOX:	1.21	1.41	2.12	1.64	3.99	1.04	1.18	5.08	0.81	1.49

0Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates.

0Cal. Year: 2012	Region: Low	Altitude: 500. Ft.								
I/M Program: No	Ambient Temp: 86.6 / 86.6 / 86.6 F									
Anti-tam. Program: No	Operating Mode: 20.6 / 27.3 / 20.6									
Reformulated Gas: No										
0Veh. Type: LDGV LDGT1 LDGT2 LDGT	HDGV LDDV LDDT HDDV MC All Veh									
+ Veh. Spd.: 15.0 15.0 15.0	15.0 15.0 15.0 15.0 15.0									
VMT Mix: 0.630 0.212 0.101	0.010 0.008 0.002 0.033 0.004									
ZEV Fract: 0.00% 0.00%										
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.56	2.94	4.11	3.32	5.62	0.61	0.84	2.52	6.54	2.82
Exhst CO:	21.43	24.22	36.15	28.07	30.69	1.85	2.05	14.49	31.83	23.21
Exhst NOX:	1.22	1.45	2.17	1.68	3.76	1.20	1.36	5.87	0.72	1.54